

What is Claimed Is:

1. A drive clutch for a continuously variable transmission, the drive clutch connected to an input shaft that is rotatable about a longitudinal axis, comprising:

5 a stationary sheave positioned about the input shaft;
a movable sheave positioned about the input shaft, the movable sheave being movable closer to or further from the stationary sheave along the longitudinal axis;

a motor connected to the input shaft and rotatable about the longitudinal axis, the motor being rotatable relative to the rotation of the input shaft; and

10 a centrifugal weight system operably connected to the motor so as to pivot centrifugally outward relative to the longitudinal axis in response to the rotation of the motor, moving the movable sheave closer to or further from the stationary sheave.

2. The drive clutch of claim 1 wherein the motor is rotatable at a speed faster than the speed
15 of rotation of the input shaft.

3. The drive clutch of claim 1 wherein the motor is rotatable at a speed equal to or slower than the speed of rotation of the input shaft.

20 4. The drive clutch of claim 1 wherein the motor comprises an electric motor.

5. The drive clutch of claim 1 wherein the centrifugal weight system comprises one or more flyweights and a reaction arm, the flyweights capable of pivoting centrifugally outward relative

to the longitudinal axis upon rotation of the motor to cause the reaction arm to move the movable sheave closer to or further from the stationary sheave.

6. A drive clutch for a continuously variable transmission, the drive clutch connected to an input shaft that is rotatable about a longitudinal axis, comprising:

a stationary sheave positioned about the input shaft,

a movable sheave positioned about the input shaft, the movable sheave being movable closer to or further from the stationary sheave along the longitudinal axis;

a centrifugal weight system for pivoting centrifugally outward relative to the longitudinal axis in response to rotation, moving the movable sheave closer to or further from the stationary sheave, wherein the centrifugal weight system is rotatable independently of the input shaft.

7. The drive clutch of claim 6 wherein the centrifugal weight system is rotatable through the use of a motor.

8. The drive clutch of claim 7 wherein the motor comprises an electric motor.

9. The drive clutch of claim 6 wherein the centrifugal weight system is rotatable at a speed faster than the speed of rotation of the input shaft.

10. The drive clutch of claim 6 wherein the centrifugal weight system is rotatable at a speed equal to or slower than the speed of rotation of the input shaft.

11. The drive clutch of claim 6 wherein the centrifugal weight system comprises one or more flyweights and a reaction arm, the flyweights capable of pivoting centrifugally outward relative to the longitudinal axis upon rotation of the centrifugal weight system to cause the reaction arm to move the movable sheave closer to or further from the stationary sheave.

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12. A continuously variable transmission connectable between a source of rotary motion, which includes an input shaft and a driven device, comprising:

(a) a drive clutch connected to an input shaft for rotating about a longitudinal axis;

(b) a driven clutch connected to the driven device;

10 (c) a belt connected between said drive clutch and said driven clutch and operable to transmit rotary motion therebetween;

wherein the drive clutch comprises:

(i) a stationary sheave positioned about the input shaft;

15 (ii) a movable sheave positioned about the input shaft, the movable sheave being movable closer to or further from the stationary sheave along the longitudinal axis;

(iii) a motor connected to the input shaft and rotatable about the longitudinal axis, the motor being rotatable relative to the rotation of the input shaft; and

20 (iv) a centrifugal weight system operably connected to the motor so as to pivot centrifugally outward relative to the longitudinal axis in response to the rotation of the motor; moving the movable sheave closer to or further from the stationary sheave.

13. The drive clutch of claim 12 wherein the motor comprises an electric motor.

14. The drive clutch of claim 12 wherein the belt is continuously engaged by the drive clutch when the stationary sheave and the movable sheave are at maximum separation.

15. The drive clutch of claim 12 wherein the belt is disengaged by the drive clutch when the stationary sheave and the movable sheave are at maximum separation.

16. The drive clutch of claim 12 wherein the motor is rotatable at a speed faster than the speed of rotation of the input shaft.

17. The drive clutch of claim 12 wherein the motor is rotatable at a speed equal to or slower than the speed of rotation of the input shaft.

18. The drive clutch of claim 12 wherein the centrifugal weight system comprises one or more flyweights and a reaction arm, the flyweights capable of pivoting centrifugally outward relative to the longitudinal axis upon rotation of the motor to cause the reaction arm to move the movable sheave closer to or further from the stationary sheave.

19. A drive clutch of a transmission system, the drive clutch comprising:

an input shaft coupled to an engine wherein the input shaft rotates about a longitudinal axis at a speed;

a stationary sheave coupled to the input shaft wherein the stationary sheave rotates about the longitudinal axis at the same speed as the input shaft;

a movable sheave coupled to the input shaft wherein the movable sheave rotates about the longitudinal axis at the same speed as the input shaft, the movable sheave also movable along the longitudinal axis;

a motor coupled to the input shaft and having an interface; and

5 a centrifugal weight system disposed about the input shaft adjacent to the movable sheave and coupled to the interface of the motor so that the weight system rotates at the speed of the interface of the motor wherein the weight system moves the movable sheave closer to or further from the stationary sheave depending on the speed of its rotation;

10 wherein the motor is operable in an off mode, a positive on mode, or a negative on mode, wherein when the motor is operating in the off mode, its interface rotates at the same speed as the input shaft, when the motor is operating in the positive on mode, its interface is rotating faster than the input shaft and when the motor is operating in a negative on mode, its interface is rotating slower than the input shaft.

15 20. The drive clutch of claim 19 wherein the motor comprises an electric motor.

21. The drive clutch of claim 19 wherein the centrifugal weight system comprises one or more flyweights and a reaction arm, the flyweights capable of pivoting centrifugally outward relative to the longitudinal axis upon rotation of the interface of the motor to cause the reaction
20 arm to move the movable sheave closer to or further from the stationary sheave.

22. A drive clutch for a continuously variable transmission, the drive clutch connected to an input shaft that is coupled to an engine of a vehicle and rotatable about a longitudinal axis, comprising:

a stationary sheave positioned about the input shaft;

5 a movable sheave positioned about the input shaft, the movable sheave being movable closer to or further from the stationary sheave along the longitudinal axis;

a centrifugal weight system for pivoting centrifugally outward relative to the longitudinal axis in response to rotation, moving the movable sheave closer to or further from the stationary sheave;

10 a means for rotating the centrifugal weight system independently of the rotation of the input shaft.